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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,364	07/18/2003	Adlai H. Smith	38203-6215	3164

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DAVID A. HALL  
HELLER EHRMAN ET AL.  
4350 LA JOLLA VILLAGE DRIVE #700  
SAN DIEGO, CA 92122

EXAMINER
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KIM, PETER B

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 03/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/623,364

Applicant(s)

SMITH ET AL.

Examiner

Peter B. Kim

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SW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-5 is/are allowed.
- 6) ☒ Claim(s) 1 and 7-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicant's arguments filed on Jan. 28, 2005 have been fully considered.

#### ***Claim Objections***

Claims 1 and 15 are objected to because of the following informalities: Regarding claim 1, in the recitation "wherein the illumination source and optical element cooperate to produce," it is not clear whether "optical element" is the same optical element mounted on the reticle. Regarding claims 1 and 15, "narrow" is vague because the term is relative and specific distance is not disclosed. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 10, 11, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Takahashi (6,665,049).

Takahashi discloses a method of in-situ measurement of optical aberration comprising producing an illumination at low partial coherence and chief rays filling an entrance pupil with plurality of light ray bundles onto a plurality of locations on a reticle (col. 18, lines 19–67); exposing measurement fiducials of an encoded face of an optical element onto a sensing plane; measuring relative positions of the exposed measurement fiducials on the sensing plane (col. 22,

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line 19 – col. 23, line 13); and determining the optical aberration from the measured positions and known relative positions of the fiducials (col. 22, lines 19-50). Takahashi discloses fiducials that are crosses (Fig. 10 A-C). Takahashi discloses in Fig. 3, changing chief ray angles that vary as a function of position on the encoded face.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Zheng et al. (Zheng) (2001/0017693).

Takahashi discloses the claimed invention as discussed above; however, Takahashi does not disclose fiducials that are square toruses and fiducials that are alignment marks. Zheng discloses in Fig. 1, fiducials that are squares. Zheng also discloses that the test reticle is used to accurately align the image (para 0009). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the square fiducials of Zheng and alignment marks of Zheng in order to accurately place the image and compensate for aberration as taught by Zheng in para 0009-0011.

Claims 12-14, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Matsuyama et al. (Matsuyama) (2002/0171815).

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Takahashi discloses the claimed invention as discussed above; however, Takahashi does not disclose an illumination modifying optic of a diffuser or an opaque disk with a hole in it. Matsuyama discloses an illumination modifying optic of an opaque disk with a hole in it (Fig. 2, ref. 7L) or a diffuser (para 0493). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to provide the modifying optic of Matsuyama to the invention of Takahashi in order to illuminate the fiducials on the reticle as taught by Matsuyama in para 0022-0026.

#### *Allowable Subject Matter*

Claims 2-5 are allowed.

#### *Response to Arguments*

Applicant argues that Takahashi does not disclose changing of chief ray angles; however, Takahashi discloses the limitation in Fig. 3.

#### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter B. Kim whose telephone number is (571) 272-2120. The examiner can normally be reached on 8:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Peter B. Kim  
Primary Examiner  
Art Unit 2851

March 9, 2005